ESO 1261

1986 CUSTOM RATE AND OPERATING COST ESTIMATES FOR NEW MACHINERY IN OHIO*

Revised and Adopted for Ohio
by
Allan E. Lines
Extension Economist

April 1986

Department of Agricultural Economics and Rural Sociology
Ohio Cooperative Extension Service
The Ohio State University

*Data prepared by: Fred J. Benson, Extension Economist - Farm Management and Karen E. Gensmer, undergraduate assistant; both in the Department of Agricultural and Applied Economics at the University of Minnesota.

1986 CUSTOM RATE AND OPERATING COST ESTIMATES FOR NEW MACHINERY IN OHIO

Revised and Adapted for Ohio by Allan E. Lines

The suggested custom rates provided in the following tables have been calculated by formula from the most recent farm machinery, energy, and labor prices available. In times of stable price levels, surveys of market custom rates are a reasonable method for determining charges; however, in today's world of drastically changing costs, any survey is out of date before the summary is completed and made available. We feel that our method of estimating custom rates can provide reasonable estimates as a base for determining a negotiated rate between a purchaser and a supplier of custom services.

You can expect to pay lower custom rates this year. There were some slight price increases in some types of machinery, and some types of machinery decreased in price. New equipment prices were obtained from several regional sales offices of farm equipment manufacturers, and these prices were averaged for each tractor or implement.

A survey of extension agents indicates that buyers of new machinery could generally negotiate an additional 15 percent off list price. This publication considers machinery prices to include a 6 to 8 percent reduction off list price, representative of transportation and set up charges for farm machinery. The cost estimates in this publication represent a 21 to 23 percent discount from list price and therefore reduce overhead costs. (See ESO 1262, Ohio Farm Machinery Cost Estimates for 1986.)

The items listed in the tables include a description of the implement, the tractor or combine base used with the implement, and the cash operating, total, and suggested custom rate costs on a per acre and per hour basis. Also included on a per acre or per hour basis are the estimated costs of overhead, hours of labor, repairs, maintenance, fuel, and lubrication.

Machine and Tractor Identification: The name of the implement and the size of the tractor or combine base is provided in columns 1 and 2. A self-propelled implement such as a swather will have three dashes (---) indicating that no tractor is used. Combines are presented slightly differently. The head of the combine is identified in the first column, and the size of the base unit is given in the second column. For example, the "COMBINE SM GRAIN MED" describes a medium sized combine head used for harvesting small grains. The second column describes the base combine as a medium sized unit. The medium sized combine base is also used on the medium sized soybean head and the four-row corn heads.

Cash Operating Costs: These costs, provided on a per hour and per acre basis, are estimates of the costs of fuel (diesel), oil, and repairs for the tractor and the implement as used for the particular function described. Labor cost estimates are not included in this figure.

Total Costs: Total costs provide estimates of all costs associated with carrying out the particular function. These costs include cash operating costs, labor, and overhead costs for the tractor and implement. Labor is valued at $5.20 per hour for unskilled labor and $8.20 per hour for skilled labor.

Suggested Custom Rates: The suggested custom rate values include an additional 20 percent over the total cost figures. This margin provides a profit to the custom operator and a return for the risk and travel expenses involved. Many times a custom operator will cover more acres annually than a commercial farmer. Therefore, for popular custom services the overhead costs may be spread over more acres and hours, thereby reducing the total costs.

Overhead Cost/Acre: The overhead cost per acre is the total annual overhead cost of the tractor and implement on a per acre basis typical of a commercial farmer.

Labor Hours/Acre: This represents an estimate of the required hours of labor on one acre with a specific machine. It includes a measure for travel and set up time as well as direct use machine field time.

Repair and Maintenance/Acre: This is an estimate on a per acre basis for the average cost of repairs and maintenance of the tractor and implement as used on one acre. A set of formulas is used from the 1984 AGRICULTURAL ENGINEERS YEARBOOK.

Fuel and Lube/Acre: This is an estimate of fuel (diesel) and oil costs per acre where diesel fuel is estimated to cost $1.00 per gallon and oil cost is estimated to be 10 percent of the fuel costs.

Custom rates will vary from area to area and are always a function of the demand for and the supply of those custom services. The charges for the services may be determined in different ways for different situations. For example, if two farmers are trading services they may price their services on a cash cost basis. This assumes that the value of their labor and machinery overhead would be approximately the same. Cash cost and labor expenses could only be expected to be recouped if they were being paid by an insurance settlement to replant a crop. The assumption here is that the ownership costs already are considered as a normal production cost.

If farmers trading machinery use consider their inputs, labor, and machinery overhead unequal, they should base their rates on a total cost or a suggested custom rate basis.

The following tables are the results of the projections for 1986.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, J. Michael Sprott, Director of the Ohio Cooperative Extension Service, The Ohio State University.

TILLAGE EQUIPMENT

MACHINE	TRACTOR HP	SUGGESTED CUSTOM RATES: CASH COST BASIS PER HOUR	CASH COST BASIS PER ACRE	TOTAL COST BASIS PER HOUR	TOTAL COST BASIS PER ACRE	COST PLUS BASIS PER HOUR	COST PLUS BASIS PER ACRE	OVERHEAD COST/ACRE	MANHOURS /ACRE	REPAIR +MAINT $/ACRE	FUEL +LUBE $/ACRE
MB PLOW 2-16	40	4.37	3.76	15.35	13.23	18.27	15.74	4.89	.879	1.49	2.27
MB PLOW 3-16	60	6.48	3.71	19.85	11.37	23.57	13.50	4.62	.584	1.45	2.27
MB PLOW 4-16	75	10.52	4.52	31.38	13.49	36.94	15.88	6.69	.439	2.40	2.13
MB PLOW 5-16	100	14.00	4.82	39.17	13.48	46.16	15.88	6.84	.351	2.55	2.27
MB PLOW 6-16	120	16.70	4.78	43.57	12.48	51.08	14.63	6.18	.292	2.51	2.27
MB PLOW 7-16	140	19.51	4.79	49.79	12.23	58.52	14.37	6.14	.251	2.52	2.27
MB PLOW 8-16	160	23.93	5.14	58.81	12.64	69.13	14.86	6.36	.219	2.87	2.27
MB PLOW 9-18	225	30.76	5.22	73.95	12.55	86.80	14.74	6.43	.173	2.70	2.52
MB PLOW 10-18	225	31.75	4.85	76.38	11.67	90.20	13.78	6.01	.156	2.58	2.27
MB PLOW 12-18	275	37.83	4.82	90.82	11.56	108.53	13.82	6.07	.130	2.51	2.31
CHISEL PLOW 10 FT	75	7.77	1.78	24.58	5.63	28.81	6.60	2.64	.234	.65	1.13
CHISEL PLOW 15 FT	120	12.74	1.95	35.26	5.39	41.81	6.39	2.63	.156	.74	1.21
CHISEL PLOW 17 FT	140	14.59	1.97	39.05	5.26	46.24	6.23	2.58	.138	.72	1.25
CHISEL PLOW 20 FT	160	17.32	1.98	44.40	5.09	52.35	6.00	2.50	.117	.77	1.21
CHISEL PLOW WING 24	225	23.34	2.23	64.62	6.17	76.66	7.32	3.43	.097	.81	1.42
CHISEL PLOW WING 29	250	26.52	2.10	74.36	5.88	87.90	6.95	3.36	.081	.79	1.30
CHISEL PLOW WING 35	300	30.74	2.01	82.68	5.41	98.20	6.43	3.05	.067	.72	1.30
FIELD CULTIVATOR 12	75	7.53	1.24	23.33	3.85	27.87	4.60	1.73	.168	.43	.82
FIELD CULTIVATOR 18	100	10.69	1.23	30.48	3.49	36.56	4.19	1.66	.117	.47	.76
FIELD CULTIVATOR 28	160	17.73	1.31	45.57	3.36	54.53	4.02	1.66	.075	.53	.78
FIELD CULTIVATOR 37	225	22.80	1.27	56.76	3.16	67.78	3.78	1.89	.001	.44	.83
FIELD CULTIVATOR 50	250	27.99	1.15	80.24	3.31	95.49	3.94	1.94	.042	.47	.68
DISK CHISEL 9 FT	100	10.57	2.77	34.01	8.91	39.31	10.29	4.75	.267	1.04	1.73
DISK CHISEL 11 FT	100	11.02	2.24	33.53	6.83	41.66	8.49	3.51	.208	.90	1.34
DISK CHISEL 14 FT	100	11.99	2.00	32.84	5.47	45.22	7.54	2.59	.170	.90	1.10
DISK 10 FT	60	6.06	1.25	23.12	4.77	27.75	5.72	2.43	.210	.43	.82
DISK 16 FT	75	8.41	1.08	33.99	4.38	40.81	5.26	2.61	.131	.45	.64
DISK 17 FT	75	8.67	1.05	35.98	4.37	43.16	5.24	2.67	.124	.45	.60
DISK 20 FT	100	11.61	1.20	42.82	4.42	51.37	5.30	2.67	.105	.52	.68
DISK 21 FT	100	11.70	1.15	43.47	4.27	52.12	5.12	2.60	.100	.50	.65
DISK 24 FT	120	13.99	1.20	51.70	4.44	61.90	5.32	2.78	.088	.52	.68
DISK 28 FT	140	16.11	1.19	58.17	4.28	69.75	5.14	2.71	.075	.51	.68
DISK 32 FT	160	18.70	1.21	64.77	4.17	77.54	5.00	2.63	.066	.52	.68
DISK 40 FT	180	22.37	1.15	81.76	4.22	96.68	4.98	2.79	.053	.54	.61
DISK OFFSET 14 FT	140	14.46	2.37	44.82	7.34	53.81	8.81	4.10	.167	.85	1.51
DISK OFFSET 16 FT	160	16.65	2.38	48.29	6.92	57.90	8.29	3.77	.146	.87	1.51
DISK OFFSET 18 FT	180	18.91	2.41	53.92	6.86	64.60	8.22	3.78	.130	.90	1.51
DISK-WING OFFSET 21	225	21.41	2.34	65.44	7.14	78.44	8.56	4.23	.111	.72	1.62
DISK-WING OFFSET 23	225	22.16	2.21	71.52	7.13	85.65	8.53	4.39	.102	.73	1.48
LANDPLANE 45-12 FT	180	18.91	2.95	54.25	8.48	65.10	10.17	4.64	.169	1.10	1.86
LANDPLANE 55-14 FT	225	22.98	2.87	78.37	9.80	94.04	11.76	6.22	.135	1.02	1.86
LANDPLANE 70-14 FT	225	23.25	3.11	81.09	10.86	97.30	13.03	6.99	.145	1.12	1.99
SPRINGTOOTH DRAG 30	60	5.83	.36	32.02	2.00	38.43	2.40	1.29	.067	.12	.25
SPRINGTOOTH DRAG 48	75	7.48	.25	37.75	1.25	45.27	1.50	.81	.036	.08	.16

MISCELLANEOUS EQUIPMENT

MACHINE	TRACTOR HP	SUGGESTED CUSTOM RATES: CASH COST BASIS PER HOUR	CASH COST BASIS PER ACRE	TOTAL COST BASIS PER HOUR	TOTAL COST BASIS PER ACRE	COST PLUS BASIS PER HOUR	COST PLUS BASIS PER ACRE	OVERHEAD COST/ACRE	MANHOURS /ACRE	REPAIR +MAINT $/ACRE	FUEL +LUBE $/ACRE
MEDIUM TRUCK (USED)	---	9.76	6.44	20.77	13.71	23.99	15.83	3.83	.660	4.63	1.81
HEAVY TRUCK (USED)	---	15.80	10.43	30.21	19.94	34.77	22.95	6.08	.660	7.40	3.03
LIGHT TRUCK	---	7.41	4.89	16.92	11.17	19.61	12.94	2.85	.660	3.44	1.45
MEDIUM TRUCK	---	13.16	8.69	26.89	17.75	30.90	20.39	5.63	.660	6.87	1.81
HEAVY TRUCK	---	21.40	14.13	40.30	26.60	46.15	30.46	9.04	.660	11.10	3.03
MANURE SPREADER 150	75	10.38	2.97	27.96	8.01	32.74	9.38	3.51	.292	1.56	1.42
MANURE SPREADER 225	100	15.93	4.56	40.07	11.48	46.71	13.38	5.40	.292	2.67	1.89
MANURE SPREADER 400	100	18.26	3.92	45.60	9.80	53.71	11.54	4.74	.219	2.50	1.42
GRAVITY BOX 185 BU	40	4.21	2.54	15.30	9.24	18.20	11.00	3.56	.604	.95	1.60
GRAVITY BOX 240 BU	40	4.28	2.59	15.56	9.40	18.50	11.18	3.67	.604	.99	1.60
HAY WAGON	40	4.73	1.25	20.35	5.38	24.26	6.42	1.38	.529	.55	.70
FORAGE WAGON 14 FT	40	6.41	3.87	22.64	13.68	25.96	15.69	6.67	.604	2.28	1.60
FORAGE WAGON 16 FT	40	6.64	4.01	23.28	14.07	26.66	16.11	6.91	.604	2.42	1.60

PLANTING EQUIPMENT

CORN PLANTER 4-36	40	6.94	1.52	38.31	8.36	44.20	9.65	4.69	.253	.94	.58
CORN PLANTER 6-36	60	11.15	1.62	56.87	8.27	66.85	9.73	5.22	.169	1.05	.58
CORN PLANTER 6-30	60	10.39	1.81	52.22	9.12	59.81	10.44	5.58	.203	1.12	.69
CORN PLANTER 8-30	75	14.42	1.89	71.24	9.33	82.12	10.75	6.15	.152	1.24	.65
CORN PLANTER 12-30	100	21.27	1.86	101.54	8.86	113.91	9.94	6.15	.101	1.28	.58
MIN-TIL PLANTER 4-36	60	9.44	2.65	46.44	13.03	53.28	14.95	7.62	.326	1.54	1.11
MIN-TIL PLANTER 6-36	75	12.44	2.33	59.27	11.09	68.81	12.87	6.92	.217	1.40	.93
MIN-TIL PLANTER 6-30	75	12.33	2.77	58.53	13.14	66.40	14.91	8.16	.260	1.66	1.11
MIN-TIL PLANTER 8-36	100	17.58	2.96	78.91	13.29	90.89	15.30	8.66	.195	1.85	1.11
MIN-TIL PLANTER 8-30	100	17.99	2.52	81.34	11.41	92.74	13.01	7.51	.163	1.60	.93
MIN-TIL PLANTER 12-30	160	26.99	3.03	111.36	12.50	125.48	14.08	8.36	.130	1.84	1.19
POTATO FILLER	---	1.78	.31	18.69	3.25	20.78	3.62	2.94	0	.29	.02
POTATO ROW MARKER 4R	120	11.71	2.35	58.82	11.81	66.14	13.28	7.34	.249	.76	1.59
POTATO ROW MARKER 6R	140	13.76	1.84	75.63	10.13	86.88	11.63	6.87	.166	.61	1.24
POTATO PLANTER 4 ROW	120	16.74	4.37	90.39	23.60	100.64	26.27	14.79	.647	2.30	2.07
POTATO PLANTER 6 ROW	140	21.86	3.80	124.39	21.65	142.15	24.74	14.89	.432	2.20	1.61
BEET PLANTER 12 ROW	100	15.61	3.34	79.39	17.01	95.26	20.41	11.41	.266	1.93	1.41
GRAIN DRILL PW 12 FT	40	6.93	1.45	33.47	7.01	39.85	8.34	3.58	.232	.90	.55
GRAIN DRILL PW 14 FT	40	7.06	1.27	34.14	6.12	39.18	7.03	3.16	.199	.79	.47
GRAIN DRILL PW 16 FT	60	9.38	1.47	40.42	6.34	47.05	7.39	3.39	.174	.85	.62
GRAIN DRILL PW 20 FT	75	11.65	1.46	47.86	6.01	55.30	6.94	3.36	.139	.84	.62
GRAIN DRILL PW 24 FT	75	12.65	1.32	52.80	5.53	60.50	6.33	3.21	.116	.81	.52
GRAIN DRILL PW 28 FT	100	16.71	1.50	64.48	5.78	75.29	6.75	3.44	.100	.91	.59

MAINTENANCE EQUIPMENT

MACHINE	TRACTOR HP	SUGGESTED CUSTOM RATES: CASH COST BASIS PER HOUR	CASH COST BASIS PER ACRE	TOTAL COST BASIS PER HOUR	TOTAL COST BASIS PER ACRE	COST PLUS BASIS PER HOUR	COST PLUS BASIS PER ACRE	OVERHEAD COST/ACRE	MANHOURS /ACRE	REPAIR +MAINT $/ACRE	FUEL +LUBE $/ACRE
CULTIVATOR 4-36	40	4.08	.88	16.66	3.58	19.71	4.24	1.54	.223	.31	.57
CULTIVATOR 6-36	60	5.96	.85	21.42	3.07	25.37	3.63	1.44	.149	.29	.57
CULTIVATOR 6-30	60	5.85	1.01	20.63	3.55	24.69	4.24	1.61	.179	.33	.68
CULTIVATOR 8-30	75	7.66	.99	26.59	3.43	31.86	4.11	1.74	.134	.35	.64
CULTIVATOR 12-30	140	14.69	1.26	44.03	3.78	52.40	4.50	2.06	.089	.47	.79
RIDGE-CULT 4-36	75	7.70	1.65	26.70	5.74	31.49	6.77	2.91	.226	.59	1.06
RIDGE-CULT 6-36	100	11.04	1.58	35.97	5.15	42.37	6.07	2.79	.150	.64	.95
RIDGE-CULT 6-30	100	10.83	1.86	34.44	5.92	40.64	6.98	3.13	.179	.73	1.13
RIDGE-CULT 8-36	100	11.51	1.24	39.22	4.21	46.04	4.95	2.39	.113	.53	.71
RIDGE-CULT 8-30	100	11.24	1.45	37.26	4.80	43.58	5.62	2.66	.134	.60	.85
RIDGE-CULT 12-30	160	17.54	1.42	52.57	4.25	62.11	5.02	2.33	.097	.56	.85
ROTARY HOE 16	40	4.03	.37	23.70	2.18	28.28	2.60	1.33	.092	.13	.24
POTATO CULT. 4 ROW	75	7.82	1.28	23.38	3.81	27.81	4.54	1.66	.170	.47	.81
POTATO CULT. 6 ROW	75	8.43	.92	26.06	2.83	31.21	3.39	1.33	.113	.38	.54
BEET CULT. 12 ROW	100	10.52	1.75	45.75	7.63	54.90	9.15	4.97	.173	.65	1.10
BEET THINNER 6 ROW	100	12.97	6.18	52.58	25.04	63.09	30.04	14.65	.495	3.03	3.14
BEET THINNER 12 ROW	120	17.63	4.20	76.01	18.10	91.22	21.72	11.80	.248	2.31	1.89
SPRAYER 30 FT	40	4.80	.34	25.11	1.77	30.09	2.12	.68	.088	.15	.19
SPRAYER 50 FT	60	7.12	.30	29.58	1.25	35.47	1.50	.50	.053	.13	.17

HARVESTING EQUIPMENT

MACHINE	TRACTOR HP	SUGGESTED CUSTOM RATES: CASH COST BASIS PER HOUR	CASH COST BASIS PER ACRE	TOTAL COST BASIS PER HOUR	TOTAL COST BASIS PER ACRE	COST PLUS BASIS PER HOUR	COST PLUS BASIS PER ACRE	OVERHEAD COST/ACRE	MANHOURS /ACRE	REPAIR +MAINT $/ACRE	FUEL +LUBE $/ACRE
MOWER-COND 9 FT	60	7.32	1.79	33.63	8.22	39.15	9.57	5.03	.269	.82	.97
SWATHER-COND. 12 FT	---	5.10	.94	39.89	7.31	44.64	8.18	5.42	.183	.33	.61
SWATHER-COND. 15 FT	---	5.17	.76	41.19	6.04	46.07	6.76	4.52	.147	.27	.48
SWATHER 12 FT	---	6.17	1.06	58.06	9.98	65.81	11.31	8.02	.172	.49	.57
SWATHER 15 FT	---	6.23	.86	59.26	8.15	66.72	9.17	6.58	.138	.40	.45
SWATHER 18 FT	---	6.34	.73	61.27	7.02	69.41	7.95	5.70	.115	.35	.38
SWATHER 20 FT	---	6.48	.67	63.89	6.59	71.88	7.41	5.38	.103	.33	.34
1 TON STACKER	60	10.19	2.46	33.01	7.96	38.73	9.34	3.23	.268	1.50	.96
3 TON STACKER	75	15.55	3.22	44.33	9.17	51.85	10.72	4.00	.230	2.19	1.02
6 TON STACKER	100	26.47	4.79	60.95	11.03	71.50	12.94	4.53	.201	3.59	1.19
BALER PTO TWINE	40	8.37	2.21	29.66	7.84	33.47	8.85	3.13	.294	1.51	.70
ROUND BALER 1500 LB	60	11.18	2.41	31.97	6.89	37.28	8.04	3.24	.239	1.56	.85
ROUND BALER 1000 LB	60	9.81	3.26	28.28	9.38	32.15	10.67	4.21	.368	1.94	1.31
ROTARY MOWER	40	4.44	1.63	16.14	5.92	19.29	7.07	2.38	.367	.66	.97
RAKE (HYD)	40	4.87	1.39	15.78	4.52	18.66	5.34	1.64	.286	.64	.76
FORAGE HARV. 1 ROW	60	8.52	9.01	42.04	44.46	49.20	52.04	25.47	1.174	4.83	4.19
FORAGE HARV. 2 ROW	100	13.13	7.93	53.33	32.23	61.97	37.45	18.60	.671	3.94	3.99
FOR HARV 2 ROW SP	---	19.59	9.62	88.42	43.42	100.80	49.50	29.17	.545	5.62	4.00
FOR HAR 3 ROW SP	---	22.68	7.43	101.36	33.18	114.68	37.55	22.67	.363	4.36	3.06
FORAGE BLOWER LG	60	5.63	5.63	24.75	24.75	27.94	27.94	13.92	1.000	1.67	3.96
CORN PICKER 2-36	40	8.04	5.67	37.77	26.63	43.08	30.38	14.31	.783	3.81	1.86
PICKER-SHELLER 2-RO	60	9.17	6.16	38.41	25.80	44.22	29.69	13.30	.745	3.50	2.66
COMBINE SM GRAIN SM	SML	30.62	7.47	68.08	16.62	80.92	19.75	6.84	.271	5.86	1.61
COMBINE SM GRAIN ME	MED	40.43	8.55	87.50	18.51	104.05	22.01	7.96	.235	6.88	1.68
COMBINE SM GRAIN LG	LRG	46.46	7.37	98.67	15.65	117.35	18.62	6.79	.176	5.85	1.52
COMBINE SOYBEANS SM	SML	31.38	8.75	70.76	19.74	83.74	23.36	8.35	.310	6.91	1.84
COMBINE SOYBEANS ME	MED	41.03	9.92	89.60	21.66	106.21	25.68	9.46	.268	8.00	1.91
COMBINE SOYBEANS LG	LRG	47.18	9.51	101.20	20.39	119.99	24.17	8.98	.224	7.58	1.93
COMBINE CORN 3-30 SM	SML	31.36	17.69	70.69	39.88	83.67	47.20	16.86	.626	13.97	3.72
COMBINE CORN 2-38 SM	SML	30.56	20.52	67.90	45.60	80.79	54.26	18.73	.745	16.09	4.43
COMBINE CORN 3-38 SM	SML	31.58	14.06	71.45	31.82	84.45	37.61	13.56	.494	11.12	2.94
COMBINE CORN 4-36 MD	MED	41.92	14.78	92.75	32.70	109.59	38.64	14.59	.391	11.99	2.79
COMBINE CORN 4-30 MD	MED	41.78	16.07	92.22	35.47	109.02	41.93	15.77	.427	13.02	3.05
COMBINE CORN 6-30 LG	LRG	48.82	12.52	106.94	27.42	126.12	32.34	12.48	.285	10.06	2.45
COMBINE CORN 8-30 LG	LRG	50.17	10.61	111.72	23.63	131.16	27.74	11.02	.235	8.59	2.02
COMBINE CORN 12-30 J	JMB	63.67	8.98	140.43	19.80	165.38	23.32	9.49	.157	7.12	1.86
POTATO HVSTR SEED 2R	120	24.28	16.25	81.63	54.65	95.29	63.79	24.35	2.229	10.95	5.30
POTATO HRVSTR. 2 ROW	120	22.83	11.46	88.83	44.60	102.92	51.67	22.61	1.672	7.48	3.98
ROTARY DISK BEAN CUT	100	10.54	2.03	40.58	7.80	46.12	8.87	3.96	.213	.76	1.27
BEET LIFTER 4 ROW	100	17.60	5.08	99.10	28.60	118.17	34.10	20.80	.320	3.17	1.90
BEET LIFTER 6 ROW	120	20.67	3.97	114.58	22.04	136.66	26.28	16.25	.213	2.45	1.52
BEET TOPPER 4 ROW	75	9.41	2.21	48.45	11.36	57.43	13.47	7.16	.234	1.05	1.16
BEET TOPPER 6 ROW	100	12.43	1.94	56.09	8.76	66.84	10.44	5.49	.156	.91	1.03
BEET WAGON 8 TON	75	7.97	2.30	32.09	9.26	38.37	11.07	5.46	.289	.87	1.43